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09/675,020	09/28/2000	Robert S. Matson	2014-181	7650

22471 7590 05/19/2003

PATENT LEGAL DEPARTMENT/A-42-C  
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EXAMINER

DAVIS, DEBORAH A

ART UNIT

PAPER NUMBER

1641

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DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/675,020

Applicant(s)

MATSON ET AL.

Examiner

Deborah A Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25, 31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) 26-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 31-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### **Status of the claims**

1. The amendment filed November 12, 2002, in Paper #10 is acknowledged and has been entered. Claims 1-25 and 31-32 are pending and under consideration. Currently, claims 1-22 and 25 are amended and claims 31-32 have been added as new claims. Claims 26-30 have been cancelled.

### ***Information Disclosure Statement***

2. The WO93/17126 reference has not been considered because it is not in the English language, and no translation has been provided.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-2, 4-5, 6-15, 19, 22 and 31-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Moring et al (USP#6,159,368).

Moring et al anticipates the instant claims by disclosing an assembly for a microarray assay device (see Figure 2). The microplate has a plurality of discrete array formation areas each formed of flexible material (col. 14, lines 1-28). Moring et al discloses filter elements that form the bottom of the microplate wells made of material that lacks rigidity (col. 14, lines 24-28). Barriers are formed between the array formation areas (see Figure 2). Moring et al discloses a vacuum fixture defining a top surface and an interior chamber connectable to a vacuum source (col. 22, lines 5-13) with a plurality of orifices connected to the interior chamber and opening at the top surface corresponding to the array formation areas when the microplate is mounted on the top surface of the vacuum fixture (col. 22, lines 17-21). Moring et al discloses apertures (orifices) that are extended through the surface of the microplate (see Figure 3, #28) that corresponds to array formation areas. The microplate is located on top of the vacuum chamber (see Figure 2, #24). Barriers such as filter elements are formed for flexible material (col. 17, lines 25-27). The microplate comprises a support plate, a flat substrate formed of the flexible material (col. 14, lines 29-34) over the support plate (Figure 2, #24) and a gasket defining a plurality of holes over the substrate and gasket contains an array formation area (see Figure 2, #44, #32) as recited in claim 6. The microplate has a rigid frame attached to the flexible material (Figure 2, #38) as recited in claim 7. Alternatively, well can be formed in a plurality of strips arranged side by side

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within a frame designed to hold strips (col. 12, lines 14-31) as recited in claim 8. Moring et al discloses a plurality of biorecognition materials in the microplate array (col. 30, lines 30-34) as recited in claims 9-12. Moring et al discloses a cover plate that contains a nodule (cap) for each well (col. 28, lines 1-5) as recited in claim 19. The microplate has a tray (plates) that is formed of flexible material using conventional means of injection molding (col. 12, lines 6-30).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moring et al in view of Mathus et al (USP#5,858,309).

The teachings of Moring et al are set forth above and differ from the instant claims in not pointing out the material thickness, height, in the microplate and flexural modulus; hardness and specific temperature as recited in claim 18.

However, Mathus et al teaches microplates and methods for manufacturing microplates. This microplate is designed to allow UV radiation to pass through the bottom of the wells (See abstract). In the detailed description of the invention, a microplate with a material thickness of 7.5mils is used to obtain the desired wavelength (col. 4, lines 55-65).

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It would have been obvious to one of ordinary skill in the art to vary the thickness in the microplate of Moring et al as taught by Mathus et al to allow UV radiation to pass through the bottom of the wells as to obtain the desired wavelength. With respect to claim 18, it would have been further obvious to one of ordinary skill in the art to vary temperature, hardness and flexibility in microplate assemblies because they are routine optimizations that are almost always determined in material fabrication. Unless the result obtained in the instant application is a significant and unexpected difference over the prior art, it would have been obvious for one of ordinary skill in the art to employ these modifications as a means of optimizing the devices provided by the art. With respect to the barriers having a height of less than 4mm is considered a matter of design choice. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 20-21 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moring et al in view of Mohan et al (USP# 5,888,830).

The teachings of Moring et al are set forth above and differ from the instant claims in not teaching such limitations as a lid that has a plurality of caps with inlet/outlet ports, a temperature control element and a vacuum fixture.

However, Mohan et al teaches a capping plate with a plurality of caps that corresponds to an array area and seals the reaction vessel. Each cap has access to an inlet and outlet port and the microplate assembly has a temperature control element (See Figure 1 and 1A). The microplate assembly has a vacuum fixture on the surface of the interior chamber (See Figure 1). A cleavage section that has a chamber containing a plurality of vial ports, each holding separate vials with inlet and outlet ports for connecting the chamber to a vacuum supply (col. 2, lines 55-65). The temperature control element can be used to heat or cool fluid that circulates through channels in the plate (col. 13, lines 1-7). The microplate assembly also provides for a silicon heating pad that is sandwiched between the top heater block and the bottom heater block and is connected by leads to a heater control (See Figure 1) which maintains the desired heat level (col. 12, lines 59-63). Such a system would provide an improved apparatus for performing multiple chemical reactions on a solid support in a parallel fashion in a simple and easy manner (col. 1, lines 52-64).

It would have been obvious to one of ordinary skill in the art to incorporate the capping plate of Mohan et al into the microplate of Moring et al to seal the reaction vessel. The vacuum fixture taught by Mohan et al is also obvious for connecting the chamber to a vacuum supply to assist in the flow of fluid. It would have been further obvious to incorporate a heater control element to maintain a desired heat level since

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such a heating element is usually required for chemical reactions. One of ordinary skill in the art would have also been motivated to add the additional features taught by Mohan et al into the microplate assembly of Moring et al in order to provide an improved apparatus for performing multiple chemical reactions on a solid support in a parallel fashion in a simple and easy manner.

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moring et al in view of Stylli et al (USP#5,985,214).

The teachings of Moring et al are set forth above and differ from the instant claims in failing to teach a peristaltic pump.

However, Stylli et al teaches in his present invention systems and methods that utilize automated and integratable workstations for identifying chemicals having useful activity (See abstract). When live cells are being dispensed, it may be necessary to provide re-circulation of the cell culture through a fluid system in order to prevent adhesion or pooling of the cells, which can be accomplished by a peristaltic pump (col. 59, lines 20-32).

It would have been obvious to one of ordinary skill in the art to modify the microplate of Moring et al to include a peristaltic pump in as taught by Stylli et al to provide re-circulation of the cell culture that would prevent adhesion or pooling of the cells.



***Response to Arguments***

10. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah A Davis whose telephone number is (703) 308-4427. The examiner can normally be reached on 8-5 Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (703) 305-3399. The fax phone numbers for

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the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-

1123



Deborah A. Davis  
CM1, 7D16  
May 16, 2003



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05/18/03